



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,830	10/12/2001	Seb J. Savory	0537-1053.1	2275

7590 04/22/2004

Barnes & Thornburg
P.O. Box 2786
Chicago, IL 60690-2786

EXAMINER

PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/975,830	Applicant(s) SAVORY ET AL.	
	Examiner Joshua L Pritchett	Art Unit 2872	<i>pm</i>

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☒ Claim(s) 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Request for Continued Examination filed February 9, 2004 and Amendment filed December 29, 2003. Claims 1 and 21 have been amended as requested by the applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Sobiski (US 6,661,937).

Regarding claim 21, Sobiski discloses a device for applying variable differential group delay comprising at least four birefringent elements (101-104) arranged between the input and output of the device and having principal axis (Fig. 1), each birefringent element being associated with a control device for controlling the orientation of the PSPs of the signal in the element relatively to the principal axes of the element (abstract), the differential group delays of

Art Unit: 2872

the first to fourth birefringent elements each being significantly larger than the optical period at the input of the device and a controller for controlling the control devices such that for all setting of the device at most two of the birefringent elements have orientations other than 0 or 90 degrees (col. 4 lines 40-45; col. 8 lines 40-42).

Regarding claim 22, Sobiski discloses a polarization mode dispersion compensator for receiving an optical input data signal, which has been subjected to PMD, and outputting a compensated signal the arrangement. Sobiski discloses that PMD occurs in all fibers (col. 1 lines 25-29) and it is the purpose of the Sobiski invention to compensate for PMD (col. 4 lines 10-14). Therefore the input data signal would be inherently subjected to PMD because it travels in an optical fiber and the Sobiski invention then compensates for the PMD.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobiski.

Regarding claims 23 and 24, Sobiski teaches the invention as claimed but lacks specific reference to each of the birefringent elements having the same DGD. Sobiski does teach that the

Art Unit: 2872

birefringent elements are controlled (abstract). Therefore it would be within the ability of the Sobiski invention to control the DGD of each birefringent element to have the same value. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Sobiski birefringent elements produce the same DGD for the purpose of repeatedly compensating for the PMD acting on the optical signal as it travels down the optical fiber at regular periodic intervals.

Regarding claim 25, Sobiski teaches the invention as claimed but lacks reference to the use of at least 6 birefringent elements. It is within the skill of one of ordinary skill in the art to duplicate the parts of a previous invention. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Sobiski invention include additional birefringent elements for the purpose of correcting PMD in longer lengths of optical fibers.

Response to Arguments

Applicant's arguments, see Amendment, filed December 29, 2003, with respect to claims 1-9 have been fully considered and are persuasive. The rejection of claims 1-9 has been withdrawn.

Applicant's arguments, see Amendment, filed December 29, 2003, with respect to the rejection(s) of claim(s) 21-25 under Shieh in view of Noe have been fully considered and are

Art Unit: 2872

persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sobiski.

Allowable Subject Matter

Claims 1-9 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the prior art of record fails to teach or suggest a device for applying a variable differential group delay where the first, second and third birefringent elements in order have a DGD ratio of 1:2:1 and the differential group delays being significantly larger than the optical period of the signal at the input of the device.

The remaining claims depend from claim 1 and are therefore allowable for the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Art Unit: 2872

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318.

The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP 


DREW A. DUNN
SUPERVISORY PATENT EXAMINER